

sci.archaeology: Re: I've found an array of missing links in the fossil records.

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Apparently on date 29 Jul 2004 00:33:29 -0700, jameselger@hotmail.com (The Flavored Coffee Guy) said:

>*The lecture starts here.*

>

><http://news.bbc.co.uk/1/hi/sci/tech/323657.stm>

This is a quite interesting story.

There are some problems with this idea, and it stems from why we regard Neanderthal sapiens, and sapiens sapiens, to be separate species.

Hns gestation process is to give birth to the baby while it has a soft, small skull and the child then continues to develop outside of the womb. As a result of this strategy, Hns females have hips that are more or less the same width as Hns males, and also means Hns babies are evolved to complete their gestation post natal.

Hss gestation is to give birth to a developed baby. This means the mother must have hips that are sufficiently wide to allow the child's head to pass through. A consequence of this strategy is that human babies are evolved to complete gestation pre natal, and also that Hss females have broader hips than Hss males.

Unthinkable numbers of Hss babies and mothers died in childbirth, before medicine developed, because they happened to have hips that were too narrow to give birth. Hss is unusual among primates in the sense that Caesarian Section is often employed to enable childbirth.

Both of these evolutionary strategies come about as a result of the enlarged and expanded cranium associated with sapiens, i.e. the big brain relative to the body frame causes a need for evolution of wider hips, post natal development, or whatever.

Now, the point about this, these strategies are not actually compatible. When you have developed an evolutionary strategy, you can't mix that with a

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different strategy and expect it to work. When you have wings, you can fly, when you have a powerful tail, you can swim. Gain both to some reduced extent, and you can neither fly nor swim properly. Mess with the actual strategies that enable successful birth, and you are heading towards a long string of unsuccessful attempts at birth which will probably also kill the mother at some point.

Ok, so finding a four year old child with a mixture of genes from Hns and Hss shows that it can be achieved, that's pretty interesting.

I wonder to what extent, natural selection would favour the more prolific species, i.e. as modern Hss is "wide hipped female" in nature, as narrow hipped females would not reproduce, to what extent have any Hns genes been passed on? It also seems to indicate that any hybridisation was between a large group of Hss and a smaller group of Hns, as otherwise modern man would have the post natal gestation favoured and predominantly Hns genes, I would imagine.

*>My conclusion, is that in the process of evolution the sudden
>appearance of species is possible. But, it is a result of a virus,
>leaving a chunk of DNA behind. The first link proves that the nature,
>and naturally found viruses do leave behind some select amount of DNA,
>and it does enter into the reproductive system in just such a fashion
>that it is passed in breeding. The second link acknowledges the same
>is true but assumes that such genetic information cannot be passed on
>to the next generation. The first article proves otherwise, and that
>the mitochondrial DNA can pass modified genes through the ovary. This
>is true because, in humans only the females pass the mitochondrial
>DNA.*

Ok, there are two main places where DNA is found (and it's not a human thing, it's true of most animals, possibly all.) There is the Mitochondrial DNA, and there is the Nuclear DNA. Genes are found in the Nucleus and during the function of sexual reproduction, the Nuclear DNA mixes between the female and the male.

This mixing of DNA is evolution and involves the changing of genes from being a straight copy of the parent, to being a mixture of father and mother (or with suitable terms for hermaphrodites, etc.)

The Mitochondrial DNA (easier to refer to this as mtDNA) doesn't mix, and mostly is supplied by the mother, and replicates in the cell to make (usually) identical copies of the source mtDNA. I'd have said it was all from the mother but I think that might be slightly overstressing the state.

If I read your description right, you are proposing a transfer of genes by a virus? This would be extremely difficult to achieve as you need the insult to the DNA to take place after the genetic mixing during the reproductive act, and before the first cell division, as otherwise the DNA will be inconsistent and the offspring will be non-viable. I don't believe it is possible to have a duplicate infection / insult event that affects two or four cells in exactly the same way.

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I would also regard it as highly unlikely that a random insertion of DNA material into one or more chromosomes, could result in a viable animal more often than in a freak situation, and that this probability becomes exponentially more remote for higher life forms like human beings, where many aspects are a knife-edge compromise between one choice and another.

Of course, the fact that your example hybrid was young and dead, may support this a bit as a poor set of genes might well lead to early death. Still, I think it is far more likely to be a simple matter of inter-species sexual reproduction, where the child gained both sapiens² genes and Neanderthal genes through mixed parentage.